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What is claimed is:

1. A counter-thermosyphon loop heat pipe solar collector, comprising:
 - a loop heat pipe including a working fluid in the interior thereof and two sides formed respectively a heating side and a cooling side;
 - 5 a heating apparatus mounted on the heating side;
 - a cooling apparatus mounted on the cooling side;
 - a partition mounted on the loop heat pipe on the heating side proximate to the bottom of the loop heat pipe for separating the interior of the loop heat pipe including the working fluid to an upper zone and a lower zone; and
 - 10 a piping element vertically mounted on the partition and flowing through the partition with two opening ends respectively mounted on the upper zone and the lower zone, and being in parallel with the pipe wall of the loop heat pipe.
- 15 2. The counter-thermosyphon loop heat pipe solar collector of claim 1, wherein the cooling apparatus utilizes water or gas for cooling.
3. The counter-thermosyphon loop heat pipe solar collector of claim 1, wherein the piping element has a top opening end attaching to a damper.
- 20 4. The counter-thermosyphon loop heat pipe solar collector of claim 1, wherein the piping element is a capillary that is in parallel with the gravity direction or forms an angle with the gravity direction.
5. The counter-thermosyphon loop heat pipe solar collector of claim 3, wherein the piping element is a capillary.
- 25 6. The counter-thermosyphon loop heat pipe solar collector of claim 3,

wherein the piping element is a narrow and elongated pipe.

- a) 7. The counter-thermosyphon loop heat pipe solar collector of claim 1,
wherein the loop heat pipe is formed in a rectangle shape.

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